

In the Claims

Please cancel claims 1-28, 30-37, 39-41, 43 and 47-51 without prejudice.

Please re-write claim 29 into independent form as follows and enter new claims

52-84 as follows:

29. (Re-written) A metering apparatus, said metering apparatus measuring the delivery of electrical energy from an energy supplier to a consumer through a first electric circuit, said metering apparatus comprising:

a revenue meter enclosed within an enclosure;

an I/O device physically separate from said enclosure, wherein said I/O device connects to at least one second electric circuit;

an interface link operative to connect said I/O device to said revenue

meter;

said revenue meter further comprising a processor, said processor operative to control the application of power to said I/O device.

30. (New) The metering apparatus of claim 29 wherein said interface link communicates at least one I/O signal.

31. (New) The metering apparatus of claim 30 wherein said I/O device further comprises at least one input and wherein said I/O signal is indicative of the amount of current flowing into said at least one input.

32. (New) The metering apparatus of claim 30 wherein said I/O device is operative to generate a signal level corresponding to said I/O signal.

33. (New) The metering apparatus of claim 30 wherein said interface link comprises a communications link.

34. (New) The metering apparatus of claim 33 wherein said communications link communicates at least one I/O signal.

35. (New) The metering apparatus of claim 34 wherein said I/O device further comprises at least one input and wherein said I/O signal is indicative of the amount of current flowing into said at least one input.

36. (New) The metering apparatus of claim 34 wherein said I/O device is operative to generate a signal level corresponding to said I/O signal.

259. (New) The metering apparatus of claim 29 wherein said interface link comprises an RS-422 type serial communications link.

16 360. (New) The metering apparatus of claim 29, wherein the revenue meter accurately timestamps transition times of at least one input of said I/O device.

30 361. (New) The metering apparatus of claim 29, wherein the processor communicates with said I/O device over said interface link and said processor is operative to detect errors in said communication.

20 362. (New) The I/O device of claim 61, wherein said error detection is performed using a cyclic redundancy check.

30 363. (New) The metering apparatus of claim 29, wherein said I/O device further includes a microprocessor operative to process signals and communicate at least one I/O signal.

23 364. (New) The metering apparatus of claim 29, wherein said I/O device is operative to receive power from said revenue meter.

30 365. (New) The metering apparatus of claim 64, wherein said I/O device further includes a microprocessor operative to process signals and communicate at least one I/O signal.

28 366. (New) The metering apparatus of claim 65, wherein said revenue meter accurately timestamps transition times of at least one input of said I/O device.

24 367. (New) The metering apparatus of claim 64, wherein said revenue meter accurately timestamps transition times of at least one input of said I/O device.

3 368. (New) The metering apparatus of claim 29, wherein said revenue meter accurately timestamps transition times of at least one input of said I/O device.

4 369. (New) The metering apparatus of claim 29, wherein said enclosure comprises a cover.

29 370. (New) The metering apparatus of claim 29, wherein said interface link is expandable.

30 371. (New) The metering apparatus of claim 70, further comprising at least one additional I/O device coupled to said interface link.

30 372. (New) A method of operating a metering apparatus, comprising:

(a) measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit using a revenue meter, said revenue meter enclosed within an enclosure;

(b) locating an I/O device external to said enclosure of said revenue meter;

(c) connecting an interface link between said revenue meter and said I/O device;

(d) communicating at least one I/O signal between said I/O device and said revenue meter via said interface link; and

(e) controlling the application of power to said I/O device with a processor in said revenue meter.

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73. (New) The method of claim 72 wherein said I/O signal is indicative of the amount of current flowing into said at least one input of said I/O device.

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74. (New) The method of claim 72 further comprising:

(f) generating a signal level corresponding to said I/O signal.

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75. (New) The method of claim 72 wherein said interface link comprises a communications link.

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76. (New) The method of claim 75 wherein said I/O device further comprises at least one input and wherein said I/O signal is indicative of the amount of current flowing into said at least one input.

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77. (New) The method of claim 72 wherein said interface link comprises an RS-422 type serial communications link.

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78. (New) The method of claim 72 further comprising:

(f) accurately timestamping transition times of at least one input of said I/O device.

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79. (New) The method of claim 72 further comprising:

(f) detecting errors in said communication.

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80. (New) The method of claim 79 wherein said detecting comprises a cyclic redundancy check.

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81. (New) The method of claim 72 further comprising:

(f) receiving power by said I/O device from said revenue meter.

82. (New) The method of claim 81 further comprising:

(g) accurately timestamping transition times of at least one input of said

I/O device.

83. (New) The method apparatus of claim 72, wherein said enclosure comprises

a cover.

84. (New) The method of claim 72 further comprising:

(f) expanding said interface link to couple to at least one additional I/O device.-

REMARKS

The Office Action Indicates that claim 29 would be allowable if re-written in independent form. Claim 29 has been re-written in independent form, thus Applicants respectfully request that the objection to claim 29 be withdrawn.

New claims 52-71 have been added to depend, directly or indirectly, from amended claim 29. Therefore, claims 52-71 contain the features of independent claim 29 plus additional features. Allowance of these claims is respectfully requested.

New claims 72-84 have been added. Independent claim 72 is modeled after claim 29, but in method form. Since the Office Action has indicated that claim 29 would be allowable, Applicants respectfully request that claim 72 also be allowed. Claims 73-84 depend, directly or indirectly from claim 72, and therefore include all the features of claim 72 plus additional features. Allowance of these new dependent claims is therefore also respectfully requested.

Applicants Request a Copy of an Initialed Previously Submitted PTO form

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Applicants respectfully request consideration of references A1-A60 and A93-A110 submitted with the Information Disclosure Statements (IDS) dated October 21 and 22, 1999, and resubmitted with Amendment A on September 13, 2001. (References A61-A92 have already been initialed). After conducting telephone conferences with the PTO's customer service office and Examiner Edwards, Examiner Edwards indicated that copies of the above-identified references were located in the PTO mailroom and that he would retrieve and consider them. Applicants respectfully request that the